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Drafts Pending Active L1: (659) 606/142
L2: (522) 606/143
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(107) ("623/2.12") or ("623/2.17") or ("623/2.18") or ("623/2.28") or ("623/2.31") or ("62
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(115) (((606/149") or ("606/150") or ("606/151") or ("606/153")).CCLS.) and valve
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Search Terms Total USPTO USOCB EPO JPO Derwent IBM TI

1 606/142.EX70, EX80, EX90, JX70, JX80, J590, J595, J500, U200, UX00, UX50, UG71, UG72, UG73, UG74, UG7 285
2 606/143.EX70, EX80, EX90, JX70, JX80, J590, J595, J500, U200, UX00, UX50, UG71, UG72, UG73, UG74, UG7 259
3 (606/143 | 606/142).CCLS. 479

Ready NUM

Document	I	Kind	Code	Supplementary	Issue Date	Page
1	US 3657744		USPAT		1972042	6
2	US 5250058		USPAT		1993100	14
3	US 5261920		USPAT		1993111	9
4	US 5571116		USPAT		1996110	32
5	US 5707380		USPAT		1998011	24
6	US 5716370		USPAT		1998021	32
7	US 5720755		USPAT		1998022	59
8	US 3657744		EPO		1972042	6
9	US 5250058		EPO		1993100	14
10	US 5571116		EPO		1996110	32
11	US 5720755		EPO		1998022	59

United States Patent [19]

Miller et al.

US005250058A

[11] Patent Number: 5,250,058

[43] Date of Patent: Oct. 5, 1993

[54] ABSORBABLE ANASTOMOSIC FASTENER
MEANS

[73] Inventors: Michael B. Miller; Mark S. Zeliger,
both of Cincinnati, Ohio; James A.
Travers, Bridgewater, N.J.

[73] Assignee: Endox, Inc., Somerville, N.J.

[21] Appl. No.: 08/3,660

[22] Filed: Jun. 5, 1991

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 043,660, Jan. 17, 1991.

[51] Int. Cl.: A61B 17/00

[52] U.S. Cl.: 604/150; 604/153; 604/159;

604/210; 24/615; 411/457; 411/509

[58] Field of Search: 604/153, 154, 220,

227/179, 411/509, 457, 512, 433, 908, 918;

24/616, 615, 590, 598, 621, 293, 297

[56] References Cited

U.S. PATENT DOCUMENTS

2,437,256 11/1984 Zeck 604/153

2,631,901 3/1953 Sugarbaker 604/153

4,284,255 10/1981 Geros 604/153

4,321,552 6/1983 Dzial 604/153

4,519,416 5/1986 Green 604/220

FOREIGN PATENT DOCUMENTS

070923 2/1992 European Pat. Off.

333332 10/1992 European Pat. Off.

Primary Examiner—Stephen C. Pellegrino

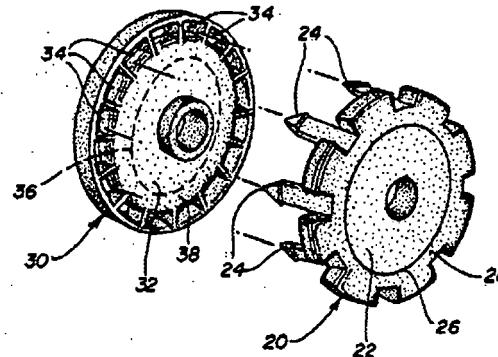
Assistant Examiner—Garry Jackson

Attorney, Agent, or Firm—Paul A. Colletti

[57] ABSTRACT

A mechanism which is capable of anastomosis of two lumens by an absorbable fastener. The fastener is made from two washer-like plates. One such plate has holes to receive a locking prongs protruding from the other plate. Fastening is done through a single linear motion that causes the prongs to pierce the tissue, insert the prongs into a receiver and causes a knife blade to cut through excess fastener material and tissue. The ease of removal, by pulling the mechanism through the formed anastomosis, is greatly enhanced. The system can be used such that the plates can be placed in any configuration to properly anastomose tissue.

16 Claims, 9 Drawing Sheets



Document	I	Kind	Code	Source	Page	Page
1	US	6030392		USPAT	2000022	25
2	US	5904696		USPAT	1999051	12
3	US	5897562		USPAT	1999042	30

United States Patent [19]

Dakov

(11) Patent Number: 6,030,392

(43) Date of Patent: Feb. 29, 2000

[54] CONNECTOR FOR HOLLOW ANATOMICAL STRUCTURES AND METHODS OF USE

[75] Inventor: Pepi Dakov, New York, N.Y.

[73] Assignee: Motorola, Inc., Schaumburg, Ill.

[21] Appl. No.: 08/888,275

[22] Filed: May 19, 1997

Related U.S. Application Data

[63] Continuation-in-part of application No. 08/538,434, Oct. 2, 1995, Pat. No. 5,720,755, which is a continuation-in-part of application No. 08/974,048, Jan. 18, 1997, abandoned.

[51] Int. Cl. 7 A61B 17/03

[52] U.S. Cl. 606/139, 606/148, 606/151

[58] Field of Search 606/139, 149, 606/152, 153, 151; 623/1; 222/175.1, 175.1, 179.1

[56] References Cited

U.S. PATENT DOCUMENTS

4,357,358	10/1982	Angelchik	128/334 R
4,368,736	1/1983	Kaster	128/334 C
4,535,483	8/1985	Klavitter et al.	606/153
4,954,316	8/1990	Davis	128/334 R
4,873,874	10/1990	Taheri	623/1

Primary Examiner—Michael Bulz

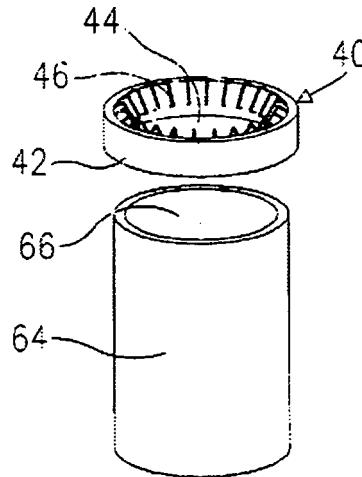
Assistant Examiner—Daphna Shai

Attorney, Agent, or Firm—Charles W. Bernhard

[57] ABSTRACT

Connector and methods for attachment to hollow anatomical structures. The connector consists of an annular rigid body and multiple holding members affixed along its opening. The opening and the inner surface of the annular body correspond respectively to the opening and the external surface of a hollow anatomical structure. The holding members are deformed by an applied force in a manner that the deformed holding members protrude into the opening of the hollow structure and press it towards the annular rigid body, thus attaching the connector to the hollow anatomical structure. Various embodiments of connectors and methods are provided for attaching the connectors to hollow anatomical structures with different external surfaces.

22 Claims, 14 Drawing Sheets



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Document #	Kind Code	Source	Entered On	Page
1 US 6042607		USPAT	2000032	62
2 US 5871469		USPAT	1999021	18
3 US 5716370		USPAT	1998021	32
4 US 5314473		USPAT	1994052	7

United States Patent [19]

Williamson, IV et al

[11] Patent Number: 6,042,607

[45] Date of Patent: *Mar. 28, 2000

[54] MEANS AND METHOD OF REPLACING A
HEART VALVE IN A MINIMALLY INVASIVE
MANNER[75] Inventors: Warren Williamson, IV, Loveland,
Ohio; Paul A. Spence, Louisville, Ky.;
George T. Christakis, Toronto, Canada;
Thomas J. Ward, Grandview Heights,
Ohio; Dominic P. DiNardo, Columbus,
Ohio; George A. Keller, Grandview
Heights, Ohio; Cecil R. Robinson,
Hilliard, Ohio; E. Dale VanHoose,
Columbus, Ohio[73] Assignee: CardioVascular Technologies LLC,
Cleveland, Ohio

[**] Notice: This patent is subject to a terminal disclaimer.

[21] Appl. No.: 08/802,948

[22] Filed: Feb. 21, 1997

Related U.S. Application Data

[63] Continuation-in-part of application No. 08/806,343, Feb. 23,
1996, Pat. No. 5,715,370.

[51] Int. Cl.7 A61F 2/24

[52] U.S. Cl. 623/2; 623/11; 606/153;

606/151

[56] Field of Search 623/2, 11; 606/149,
606/150, 151, 153

[56] References Cited

U.S. PATENT DOCUMENTS

3,857,744 4,397,2 Erek 506/153

Primary Examiner—Paul B. Prebilic
Attorney, Agent, or Firm—Terry M Gerstein

[57] ABSTRACT

A heart valve can be replaced using minimally invasive methods which include a sutureless sewing cuff that and a fastener delivery tool that holds the cuff against the patient's tissue while delivering fasteners, two at a time, to attach the cuff to the tissue from the inside out. The tool stores a plurality of fasteners. Drawstrings are operated from outside the patient's body and cinch the sewing cuff to the valve body. The cuff is releasably mounted on the tool and the tool holds the cuff against tissue and drives the fastener through the cuff and the tissue before folding over the legs of the fastener whereby secure securing between the cuff and the tissue is assured. At least two rows of staggered fasteners are formed whereby fasteners are located continuously throughout the entire circumference of the cuff. A minimally invasive surgical method is disclosed, and a method and tool are disclosed for repairing abdominal aortic aneurysms in a minimally invasive manner.

104 Claims, 41 Drawing Sheets

